

## *Selenops muehlmannorum* spec. nov. from Southern Laos (Araneae: Selenopidae)

PETER JÄGER<sup>1,3</sup> & BOUNTHOB PRAXAYSOMBATH<sup>2</sup>

<sup>1</sup>Arachnology, Research Institute Senckenberg, Senckenberganlage 25, D-60325 Frankfurt am Main, Germany.

E-mail: Peter.Jaeger@Senckenberg.de

<sup>2</sup>Department of Biology, Faculty of Science, National University of Laos, Dong Dok, Vientiane, Lao PDR

<sup>3</sup>Corresponding author

The spider fauna of Laos was for a long time neglected in terms of arachnological investigations. Only recently the spider fauna is investigated, new species are described, new records are listed and illustrations of species are provided for identification purposes (Jäger 2007; Jäger & Praxaysombath 2009, in press). Currently, 150 spider species are recorded for Laos (Jäger & Praxaysombath in press).

The family Selenopidae Simon, 1897 was not thoroughly revised in Southeast Asia. Dankittipakul and Corronca (2009) described a new genus, *Siamspinops*. Representatives are diagnosed, among others, by their large number of ventral spines at tibiae and metatarsi I–II. We include the present species in *Selenops* Latreille, 1819 due to the spination pattern of the legs, the large branched median apophysis and the broad and relatively short embolus, both of the latter characters are observed in American species, e.g., *S. aztecus* Valdez-Mondragón, 2010 (Valdez-Mondragón 2010: figs 3–4; Corronca in litt.). A comparison with Asian species from China (according to Song *et al.* 1999), Taiwan (according to Kayashima 1943) and India (according to Reimoser 1934; Gravely 1931; Patel & Patel 1973) showed that material from Champasak Province in Southern Laos belonged to an unknown species, which is described below. The family Selenopidae is firstly recorded for Laos.

Material was examined and is preserved in 70% ethanol. The female copulatory organ was treated with 96% lactic acid. Leg measurements are given as: total length (femur, patella, tibia, metatarsus, tarsus). All measurements are in millimetres. Arising points of tegular appendages in males are described as clock-positions of the left palp in ventral view. As in Sparassidae (Jäger 2008), slit sense organs close to the epigyne are illustrated as descriptive character. Material is deposited in the Senckenberg Research Institute, Frankfurt am Main, Germany (SMF) and can be traced in the collection database SeSam (online at <http://sesam.senckenberg.de>). Abbreviations used in the text: AME—anterior median eyes, ALE—anterior lateral eyes, AW—anterior width of dorsal shield of prosoma, d—dorsal, OL—length of opisthosoma, OW—width of opisthosoma, p—prolateral, PME—posterior median eyes, PL—length of dorsal shield of prosoma, PLE—posterior lateral eyes, PW—width of dorsal shield of prosoma, r—retrolateral, SD—subsequent number of spiders with tissue sample for DNA-analysis, v—ventral, I–IV—leg I–IV.

### *Selenops muehlmannorum* spec. nov.

Figs 1–14

**Type material. Holotype:** Male, Laos, Champasak Province, Muang Pathoumphone, 2.5 km S of Pakse, Vat Phou Salao, N 15°05'38.8'', E 105°48'34.6'', 149 m altitude, secondary forest, dry bed of stream, rocks, by hand, at night, 23 November 2009, P. Jäger & S. Bayer leg. (SMF).

**Paratypes:** 1 male, 1 female (SMF), same data as for holotype (tissue sample for molecular analysis available—SD 696: male, two legs; SD 680: female, 1 leg).

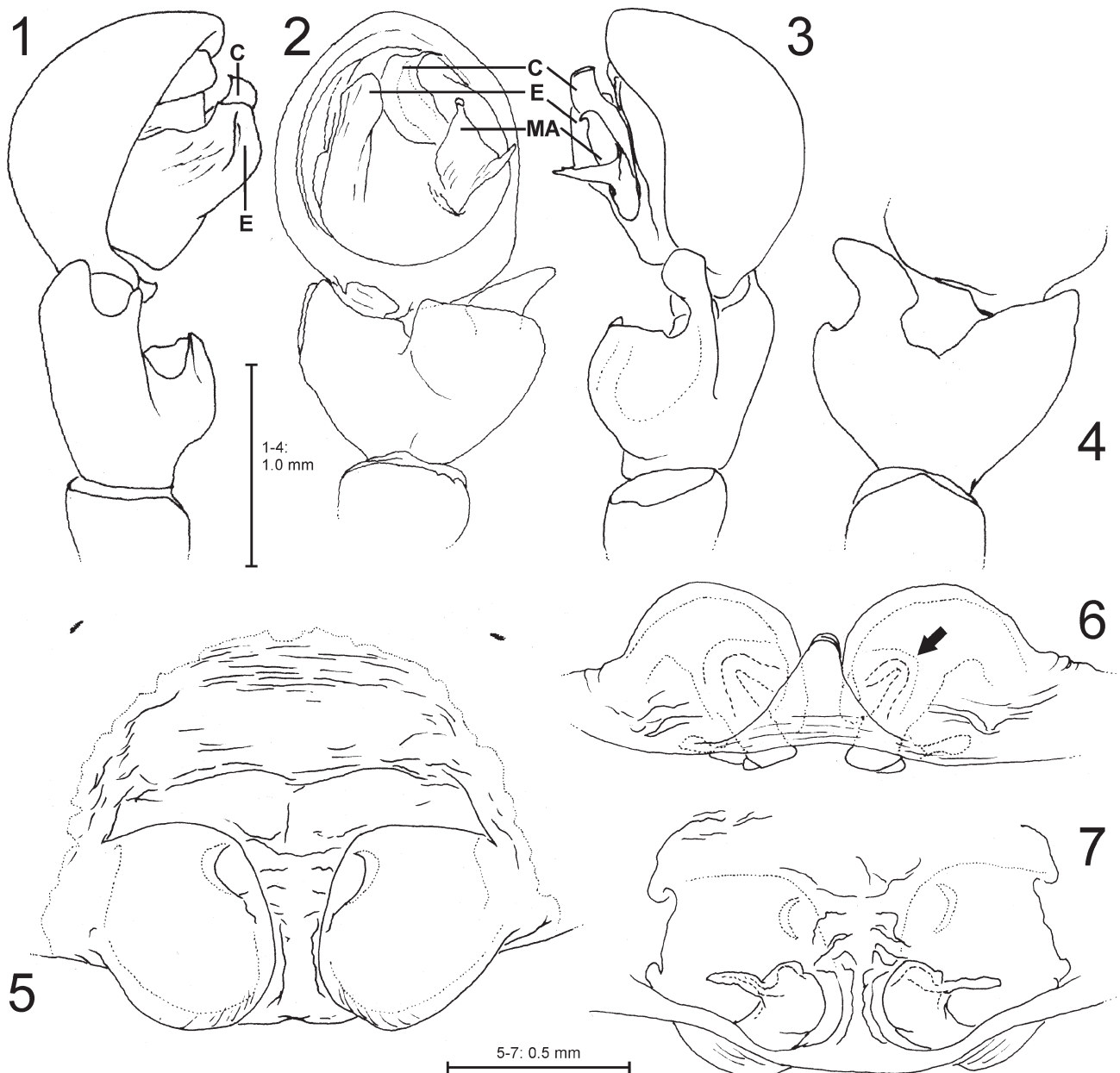
**Further material examined:** 1 juvenile (SMF), same data as for holotype.

**Etymology.** The species is named in honour of family Mühlmann from Germany for supporting the systematic research, description of biodiversity and nature conservation in Laos; noun in genitive case plural.

**Diagnosis.** Males can be recognised by having 1. a massive RTA making palpal tibia distinctly wider than long, 2. median apophysis with two apices, the distal one hook-shaped, the retrolateral one tapering, and 3. embolus broad and blunt (Figs 1–4). Female epigyne similar to that of *S. ollarius* Zhu, Sha and Chen, 1990 (see Zhu *et al.* 1990), but 1.

lateral lobes closer together and wider, 2. epigynal field wider than long and without undulated epigynal furrows (Figs 5–7, 13).

**Description. Male** (holotype, with data of paratype in parentheses): PL 4.7 (3.7), PW 5.2 (4.3), AW 2.5 (1.9), OL 5.4 (5.0), OW 3.9 (3.3). Eye diametres: AME 0.31, ALE 0.21, PME 0.30, PLE 0.46. Eye interdistances: AME–AME 0.19, AME–PME 0.10, ALE–PLE 0.21. Leg and pedipalpus measurements: pedipalpus 5.1 (1.4, 0.8, 1.3, –, 1.6); leg I 19.9 (5.5, 2.5, 5.6, 4.4, 1.9); leg II 22.5 (6.6, 2.5, 6.6, 5.0, 1.8); leg III 22.1 (7.2, 2.3, 6.2, 4.6, 1.8); leg IV 20.0 (6.8, 2.1, 5.2, 4.2, 1.7); leg formula 2341. Spination: Femur I p110, d111, r001, II–III d111; Tibia I r110, v2221, II r100, v2220, III v1200, IV 1100; Metatarsus I v120, II v220, III v200. Chelicerae with 3 anterior and 2 posterior teeth.

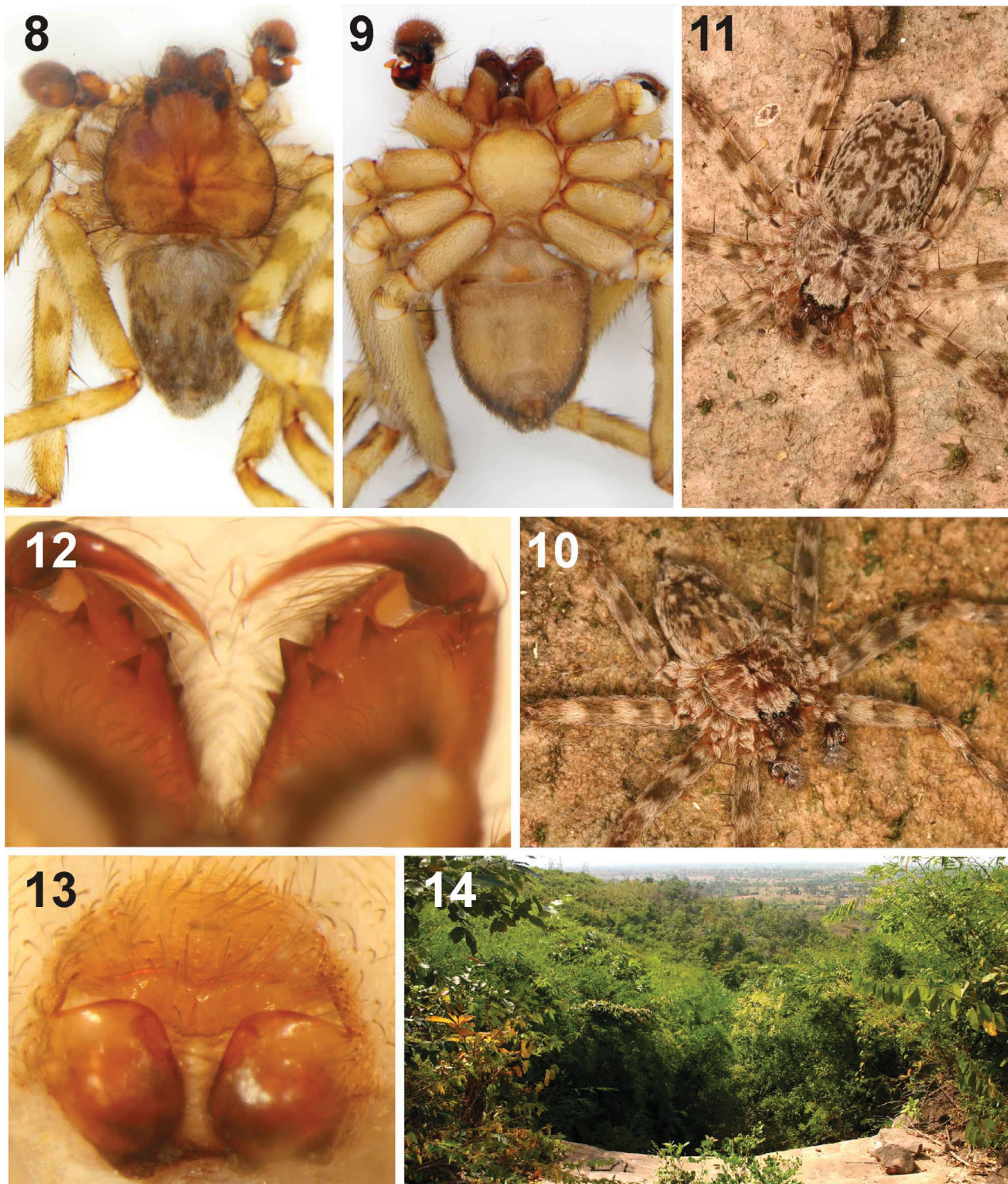


**FIGURES 1–7.** *Selenops muehlmannorum* spec. nov. from Southern Laos, Champasak Province, Phou Salao (1–4 Holotype male; 5–7 Paratype female). 1–4 Left male palp (1 prolateral, 2 ventral, 3 retrolateral, 4 tibia, dorsal); 5–6 Epigyne (5 ventral, 6 posterior; arrow pointing to V-shaped part of internal duct system); 7 Vulva, dorsal. C—Conductor, E—Embolus, MA—median apophysis.

Palp as in diagnosis. Tibia short, RTA with short and broad ventral part and slender dorsal branch. Cymbium sub-circular. Embolus arising in 8-o’clock-position, median apophysis in 4-o’clock-position, and conductor 2-o’clock-position; the latter with concave retrolateral margin (Figs 1–4).



Colouration in ethanol (Figs 8–9). Dorsal prosoma light reddish brown, indistinct pattern of marginal and central patches. Ventral prosoma and opisthosoma yellowish brown without pattern. Legs yellowish brown; femora and tibiae with each two dark annulate patches, the latter not continued ventrally; distal femora with small dark patch. Dorsal opisthosoma mottled with dark and bright irregular patches. For colour pattern of living specimens see Fig. 10.



**FIGURES 8–14.** *Selenops muehlmannorum* spec. nov. from Southern Laos, Champasak Province, Phou Salao (8–10 Holotype male; 11–13 Paratype female). 8–9 Habitus in ethanol (8 dorsal, 9 ventral); 10–11 Habitus of live specimens in original habitat, dorsal; 12 Chelicerae, ventral; 13 Epigyne, ventral; 14 Phou Salao, dry stream bed with rocks where paratypes were collected.

**Female** (paratype): PL 4.0, PW 4.4, AW 2.1, OL 6.3, OW 4.1. Eye diametres: AME 0.28, ALE 0.18, PME 0.29, PLE 0.40. Eye interdistances: AME–AME 0.20, AME–PME 0.06, ALE–PLE 0.24. Leg and pedipalpus measurements: pedipalpus 3.9 (1.1, 0.7, 1.0, –, 1.1); leg I 13.7 (4.1, 1.7, 4.0, 2.7, 1.2); leg II 16.3 (5.2, 2.0, 4.6, 3.1, 1.4); leg III 16.2 (5.6, 1.7, 4.4, 3.2, 1.3); leg IV 14.3 (5.1, 1.5, 3.8, 2.6, 1.3); leg formula 2341. Spination (as in male, only exceptions given): Femur I p1100, d111; Tibia I V2220, II v2220, III v1100, Metatarsus I v220, III v100. Chelicerae with 3 anterior and 2 posterior teeth (Fig. 12). Palpal claw with 11 teeth. Copulatory organ as in diagnosis. Lateral lobes each with one median pocket, and strongly arched in posterior view. Internal duct system short and simple, in posterior view with a distinct V-shaped part (arrow) (Figs 5–7, 13).

Colouration as in male, but pattern of dorsal prosoma more distinct and ventral opisthosoma grey. For colour pattern of living specimens see Fig. 11.

**Natural history.** The holotype of *Selenops muehlmannorum* **spec. nov.** has been collected on a wall of a staircase of a temple (Vat Phou Salao), both paratypes from rocks in a dry stream bed in a forest (Fig. 14).

**Distribution.** Known only from the type locality.

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Jose Corronca (Salta) confirmed that the *Selenops* species is undescribed. Steffen Bayer (Frankfurt) helped in collecting the type material at the Phou Salao. Jerry Duckitt (Pakse) supported the travel in Champasak Province. Thanks to all colleagues for their help.

## References

- Dankittipakul, P. & Corronca, J.A. (2009) *Siamspinops*, a new selenopid genus from Southeast Asia (Arachnida, Araneae). *Organisms, Diversity & Evolution*, 9, 69e1–69e12.
- Gravely, F.H. (1931) Some Indian spiders of the families Ctenidae, Sparassidae, Selenopidae and Clubionidae. *Records of the Indian Museum, Calcutta*, 33, 211–282.
- Jäger, P. (2007) Spiders (Araneae) from Laos with descriptions of new species. *Acta arachnologica*, 56, 29–58.
- Jäger, P. (2008) Revision of the huntsman spider genus *Heteropoda* Latreille 1804: species with exceptional male palpal conformations (Araneae: Sparassidae: Heteropodinae). *Senckenbergiana biologica*, 88, 239–310.
- Jäger, P. & Praxaysombath, B. (2009) Spiders from Laos: new species and new records (Arachnida: Araneae). *Acta Arachnologica*, 58, 27–51.
- Jäger, P. & Praxaysombath, B. (in press) Spiders from Laos with new records (Arachnida: Araneae). *Acta arachnologica*, 60.
- Kayashima, I. (1943) Description of a new species of spider from Formosa. *Transactions of the Natural History Society Formosa*, 33, 65–66.
- Patel, B.H. & Patel, H.K. (1973) Descriptions of some new species of spiders from India. *Oriental Insects*, 7, 127–132.
- Reimoser, E. (1934) Araneae aus Süd-Indien. *Revue suisse de Zoologie*, 41, 465–511.
- Song, D.X., Zhu, M.S. & Chen, J. (1999) *The Spiders of China*. The Spiders of China. Hebei Sci. Technol. Publ. House, Shijiazhuang, 640 pp.
- Valdez-Mondragón, A. (2010) Two new species of spiders of the genus *Selenops* Latreille, 1819 (Araneae: Selenopidae) and redescription of *Selenops scitus* Muma, 1953 from Mexico. *Zootaxa*, 2334, 47–58.
- Zhu, C.D., Sha, Y.H. & Chen, X.E. (1990) [Description of the genus *Selenops* from Sichuan Province China (Araneae: Selenopidae)]. *Journal of Norman Bethune University of Medicine and Science*, 16, 30–33. [in Chinese with English abstract]